CLAIMS

1. A composition for delivery of superoxide dismutase (SOD) to neuronal cells, comprising:-

SOD; linked by a cleavable linker to

a neuronal cell targeting component, comprising a first domain that binds to a neuronal cell and a second domain that translocates the SOD of the composition into the neuronal cell, wherein, after translocation of the SOD into the cell, the linker is cleaved to release SOD from the neuronal cell targeting component.

2. A composition according to Claim 1 wherein the cleavable linker is:-

- a disulphide bridge between cysteine residues, one residue on the SOD and one residue on the neuronal cell targeting component; or
- a site for a protease found in neuronal cells.

3. A composition according to Claim 1 or 2 for delivery of SOD to mitochondria of neuronal cells wherein the SOD comprises a sequence targeting the SOD to mitochondria in the neuronal cell.

4. A composition according to Claim 3 wherein the SOD is a hybrid of Mn-SOD and a sequence targeting the hybrid to mitochondria.

5. A composition according to Claim 3 or 4 wherein the mitochondria targeting sequence is derived from human Mn-SOD.

6. A composition according to any of Claims 1-5 wherein the SOD is bacterial SOD or is a derivative thereof that substantially retains the superoxide dismutase activity of bacterial SOD.

7. A composition according to any of Claims 1 to 6 wherein the first domain is selected from (a) neuronal cell binding domains of clostridial toxins; and (b) fragments, variants and derivatives of the domains in (a) that substantially retain the neuronal cell binding activity of the domains of (a).

8. A composition according to any Claims 1 to 7 wherein the second domain is selected from (a) domains of clostridial neurotoxins that translocate polypeptide sequences into cells, and (b) fragments, variants and derivatives of the domains of (a) that substantially retain the translocating activity of the domains of (a).

9. A composition according to any of Claims 1 to 8 wherein the linker is a disulphide bridge.

10. A pharmaceutical composition for treatment of oxidative damage to neuronal cells comprising a composition according to any of Claims 1 to 9 and a pharmaceutically acceptable carrier.

11. A method of delivering SOD to a neuronal cell comprising administering a composition according to Claim 10.

12. A method according to Claim 11 comprising injecting the composition.

13. A method of making a composition according to any of Claims 1 to 8 comprising chemically linking SOD, a linker and a neuronal cell targeting component.

14. A method of making a composition according to any of Claims 1 to 9 comprising expressing a DNA that codes for a polypeptide having SOD activity, a linker, and a neuronal cell targeting component.

15. A method according to claim 14 wherein the polypeptide further comprises a purification sequence and the method further comprises purifying the polypeptide and then cleaving the polypeptide to remove the purification sequence to leave SOD, the linker and the neuronal cell targeting component.

16. A composition for delivery of a therapeutic agent to neuronal cells, comprising:-

the therapeutic agent; linked by a cleavable linker to a neuronal cell targeting component, comprising a first domain that binds to a neuronal cell and a second domain that translocates the therapeutic agent of the composition into the neuronal cell wherein, after translocation of the SOD into the cell, the linker is cleaved to release SOD from the neuronal cell targeting component.

17. A composition for delivery of a therapeutic agent to neuronal cells according to Claim 16, wherein the cleavable linker is either a disulphide bridge or a site for a protease found in neuronal cells.

18. A polypeptide comprising a bacterial SOD or derivative thereof that substantially retains the superoxide dismutase activity of bacterial SOD and a sequence for targeting the polypeptide to a human mitochondria.

19. A polypeptide according to Claim 18 wherein the SOD is from *Bacillus*.

20. A polypeptide according to Claim 18 or 19 which is a fusion protein.

21. A nucleotide encoding the polypeptide of any of Claims 18-20.

22. A vector comprising the nucleotide of Claim 21.

23. A method of making a polypeptide according to any of Claims 18-20 comprising expressing the nucleotide sequence of Claim 21.

24. A cell comprising the nucleotide sequence of Claim 21 or the vector of Claim 22.

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